

REMARKS

Please consider this paper a Request for Continued Examination.

Reconsideration and allowance of the subject application are respectfully requested.

Claims 1-11 and 13-38 are pending in the application. The claims have been amended to replace "comprising" with "consisting essentially of." Basis for new claims 27-38 can be found in the presently filed application, including at original claims 1-26. Basis for the mixing to randomize the direction of the fibers can be found at page 4, lines 20-25 of the present specification. Basis for the language "which has a strength to weight ratio greater than carbon steel such that the structural member retains its shape at loads which deform carbon steel having a same weight and footprint as the structural member" can be found at Example 4 on page 12, line 31 through page 13, line 34, and page 2, lines 9-11 of the present specification. No new matter has been added.

The rejection of claims 1-12, 14, 16 and 17 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,068,804 (Betzner) is respectfully traversed. Betzner does not anticipate the claimed invention for the following reasons.

Claim 1 recites the preamble "consisting essentially of." MPEP 2111.03 states that "[t]he transitional 'consisting essentially of' limits the scope of a claim to the specific materials or steps 'and those that do not materially affect the basic and novel characteristic(s)' of the claimed invention."

Adding the asphalt and rubber of Betzner to the method steps and materials recited in present claim 1 would materially affect the basic and novel characteristics of the presently claimed invention. The claimed invention provides a structural product that retains its shape under loads. See the Example "Fiber/PF composite" (present invention) in Table 4 on page 13 of the present specification, in which the claimed structural material retained its shape under load and the corresponding steel structure deformed under the same load.

In contrast, Betzner adds asphalt and rubber to provide a flexible material to be used as an **expansion joint between structural members**. Rubber particles

can be added that will allow an expansion joint material to recover its thickness after compression (column 3, lines 27-28 of Betzner).

Thus, adding the required components of Betzner, asphalt and rubber, to the claimed method would materially transform the claimed structural member that retains its shape under load to a completely different structure (expansion joint) that is designed to flex under load between structure members. Thus, the composition and method of Betzner cannot anticipate present claims 1-12, 14, 16 and 17. Accordingly, withdrawal of the Section 102 rejection is respectfully requested.

The rejection of claims 23 and 24 under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Betzner is respectfully traversed. Claims 23 and 24 are not anticipated or obvious over Betzner for the same reasons claim 1 is not anticipated or obvious over Betzner, as discussed above. Accordingly, withdrawal of the Section 102 and 103 rejections is respectfully requested.

The rejection of claim 13 under 35 U.S.C. § 103(a) as being unpatentable over Betzner is respectfully traversed. Claim 13 is not obvious over Betzner for the same reasons claim 1 is not obvious over Betzner, as discussed above. Accordingly, withdrawal of the Section 103 rejection is respectfully requested.

The rejection of claim 15 under 35 U.S.C. § 103(a) as being unpatentable over Betzner in view of U.S. Patent No. 6,086,720 (Bodary) is respectfully traversed. Claim 15 is not obvious over Betzner for the same reasons claim 1 is not obvious over Betzner, as discussed above, and for the following reasons. There is no motivation or guidance to combine the teachings of Bodary with Betzner. For that reason alone, the Section 103 rejection should be withdrawn.

Even if Bodary and Betzner were combined, claim 15 would not be obvious over the theoretical combination for the following reasons.

Bodary describes how a main screen is raised through a fiber slurry filled tank where the fibers accumulate onto the surface of the screen as the screen ascends (column 2, rows 23-35). Prior to the main screen being lifted from the liquid, a retainer screen is lowered against the main screen in order to sandwich the fibers so that they do not fall off of the contoured main screen by gravity once out of the liquid.

One of ordinary skill in the art would recognize that the equipment is not intended to exert any type of compressive pressure on the fiber but simply intended to improve on previous technology (column 1, line 56 to column 2, line 8) in order to retain the loose fiber in position until it can be dried. Therefore there is nothing in Bodary that would lead the skilled person to adopt the multi-dimensional compression means of the present invention in order to produce a preform with a specific dry bulk density.

Furthermore, one of ordinary skill in the art would easily recognize from the description of the equipment presented in Bodary that no appreciable thickness of fiber could be accumulated on the main screen and that its only interest is in controlling fiber deposition on the contoured main screen (column 2, rows 20-22). Consequently, Bodary could not result in a preform with more than sheet like dimensions and, as a result, the skilled person would not be lead by Bodary to adopt the compressive technique of the present invention to produce a preform with substantial thickness, of at least 5mm.

In view of the lack of motivation to combine Bodary with Betzner, and the many differences between the claimed invention and the theoretical combination of Bodary and Betzner, withdrawal of the Section 103 rejection is respectfully requested.

The rejection of claims 18-22, 25 and 26 under 35 U.S.C. § 103(a) as bening unpatentable over Betzner in view of U.S. Patent No. 6,403,000 (Symons) is respectfully traversed. The claimed invention is not obvious over Betzner for the same reasons claim 1 is not obvious over Betzner, as discussed above, and for the following reasons. There is no motivation or guidance to combine the teachings of Symons with Betzner. For that reason alone, the Section 103 rejection should be withdrawn.

Even if Symons and Betzner were combined, the claimed invention would not be obvious over such a theoretical combination for the following reasons.

Symons describes the manufacture of a finished product comprising impregnating lignocellulose material with a composition of mineral oil (5-30% w/w on lignocellulose basis) and a liquid thermosetting resin (1-20% w/w on lignocellulose basis) for the purpose of making the lignocellulose product waterproof.

In Symons, impregnation consists of applying a resin/mineral oil solution to the exterior surfaces of the dry fiber material and then physically compressing the material (thereby reducing the thickness of the material) to promote infusion into the interior (column 1, lines 56-58). There is nothing in Symons that leads one of ordinary skill in the art not to use physical compression to impregnate the dry fiber material with the resin/mineral oil. In contrast, the present invention relies on the ability of a dry, hydrogen bonded lignocellulose fiber shape to absorb the liquid resin without swelling, thereby, not requiring a thickness reducing compression step.

In Symons, curing consists of subjecting the impregnated fiber shape to temperatures as high as 220 C and pressures as high as 800 psi in a mould or suitable press for 20 seconds per mm of material thickness (column 3, lines 1-6). In contrast, the present invention, preferably, but not exclusively, maintains curing temperatures below 100 C in order that water generated during PF (phenol formaldehyde) resin curing does not boil inside the material, which could cause it to rupture. Therefore, in order to accommodate D2 conditions while using a PF resin, a person skilled in the art would maintain the resin concentration well below what would be required to make the material structural. Consequently, there is nothing in Symons that would lead the skilled person to adopt the impregnation or curing conditions of the present invention.

In Symons, the mineral oil serves as a carrier for the resin and therefore low percentages of liquid resin can be applied while still maintaining good resin distribution throughout the material (column 8, lines 23-25). Also the oil acts as a hydrophobic agent preventing water penetration (column 8, lines 29-33). From this, a skilled person will conclude that the function of the resin in Symons is simply to keep the material together while the oil is there to render it waterproof. In contrast, the present invention relies on the liquid PF resin to fill the fiber material and to serve both of these functions as well as to render the cured material structural.

The crux of Symons is to minimize external water contact with the hydroxyl groups of the lignocellulose by the interposition of a hydrophobic cohesive film formed by the mineral oil/thermosetting resin. Symons acknowledges the prior art objective of minimizing hydrogen bonding by reducing the number of available

hydroxyl groups in the lignocellulosic materials by chemical modification with anhydrides.

In contrast, the present invention does not require the use of mineral oil or chemical modification with anhydrides to achieve the objective of a shaped product having the desired long life span and strength:weight.

Thus, there is nothing in Symons to lead one of ordinary skill in the art not to use mineral oil in the production of lignocellulose-resin products for water proofing purposes only.

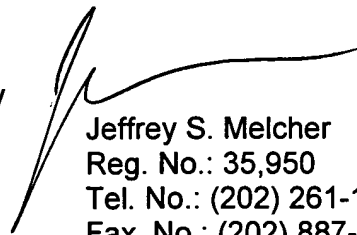
It can be, thus, clearly seen that it would not be obvious for one of ordinary skill in the art to combine the teachings of Betzner with Symons, to conceive instant invention as claimed. And, even if Betzner was combined with Symons, the claimed invention is not obvious over such a theoretical combination. Accordingly, withdrawal of the Section 103 rejection is respectfully requested.

In view of all of the rejections of record having been addressed, it is submitted that the present application is in condition for allowance and Notice to that effect is respectfully requested.

Respectfully submitted,

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